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LOUIS VAN HOUTTE.





JANUARY, 1888.

WITH THE opening of a New Year horticulturists are projecting their plans of operation for the coming active season. If wisely made these plans are the result, in each case, of the individual experience united to the related knowledge acquired from others. The sharp-sighted man who observes what his neighbors are doing, or who profits by the conversation of those engaged in his own pursuit, is often able by these means to improve his methods and effect results of importance. So, also, the enterprising horticulturist, whether professional or amateur, is attentive to the greatest of all sources of information, the press. Farmers, gardeners and fruit growers have a class of journals devoted to their interests that are unequaled in any other business pursuit. Books are published on every branch of the subject about which they may enquire. But, besides, active societies investigate all questions of interest to the members; experiment stations sufficiently endowed are making such investigations as would be unattainable to ordinary individual effort; college courses are appointed for the education and training of youths as successful leaders in practical husbandry; and, finally, the National Department of Agriculture, manned by learned and skillful operators equipped with all the best appliances of the age, is earnestly and conscientiously working

out the intricate problems that relate to the active work of the farmer and gardener. Has any other art or craft, in any age, been so dignified? Well may we magnify our vocation. It is the basis of the welfare of society, the strength of the nation, the material support of civilization. In the exercise of his art the skillful plant-grower makes application of the laws of nature as unfolded by researches in all branches of natural science; and, other things being equal, the better he understands these laws the greater results will attend his efforts. The highest type of farmer or gardener is represented by one who is broadly cultured in physical science and can make intelligent application of such knowledge to his proper pursuit. As a profession our best interests depend upon intellectual development and the extension of knowledge; even the æsthetic side of our art displays itself in proportion to our culture and consequent ability to perceive it; although the human intellect even in childhood responds to the beauties of nature, yet the highest and purest minds are ministered to most fully, and still with unsatisfied desire. Those engaged in rural pursuits for a livelihood may with pride and a high purpose pursue their calling; and those who turn to it for recreation be assured that it is capable of yielding ever new delights.

LILIUM AURATUM.

The gold-banded Lily whose magnificent blooms are the glory of the garden, will repay us for all the attention it requires. Even a single bloom would satisfy many



PROFUSE BLOOM OF THE GOLD-BANDED LILY.

flower-lovers, for it is one of the grand objects among cultivated flowers. But it usually blooms sufficiently freely to satisfy one who is even greedy of nature's beauty in this respect. Occasionally this plant will exhibit a wonderful floriferousness, and such instances have been sometimes noticed in our pages. One case of this kind is

described below and the illustration shown on the opposite page has been made from a photograph of the spike of flowers. It was raised in the city of San Francisco last summer in the garden of Mr. O. C. Pope, who relates the following account of it:

The bulb was planted out in the open ground last March; it had a southern exposure, with no extra care or protection, except that it was sheltered from the direct rays of the sun, and the ground kept moist, or not allowed to become dry. The soil is sandy, with rich garden soil on top as a top-dressing. The stalk grew over six feet in height, and there were forty-five flowers in full bloom and four buds when cut on Friday, the twenty-first of last October. If all the buds had remained on I should have had between fifty and sixty flowers, but some

dropped off; the flowers took up about two feet in length of the stem and the cluster was a foot in diameter. I had it placed in the art rooms on Montgomery street, one of the most fashionable and frequented thoroughfares of this city, and it attracted so much attention that I had some photographs taken so that you and others could see what it was.

Many thought that the flowers were wired on the stalk until they examined them, and then, much to their astonishment, they found that the flowers grew there.

I have not disturbed the bulb, but let it lie in the ground so as to see how it will do next year. I have had bulbs of the same lily, "Auratum," grown in pots that had as high as fifteen flowers, that measured between eight and nine inches in diameter.

CRIMSON ROSES.

One of the handsomest Roses on our grounds the last season was Louis Van Houtte, of which a colored plate is given in this number. The color of this variety is unsurpassed. The heat and dry weather was a severe test to Roses, and for the most part they refused to bloom; only an occasional straggler would be seen after the first blooming season and that was exceptionally short. But in the latter part of summer Louis Van Houtte made its appearance more frequently than any other and altogether in better shape. English journals report this variety doing better than usual with them the last summer, and account for it by saying that it likes the heat—they having also had a dry, hot summer. Usually we have heat enough for our Roses and have no occasion to complain on that account, and Louis Van Houtte is enabled to show its beauties with us every season, which it does most satisfactorily.

In England where, at the Rose shows, the varieties are judged by very strict rules, Louis Van Houtte occupied the twelfth place in a list of sixty varieties at the National Rose Society's London exhibition last summer.

The one fault of this Rose, if so it may be considered, is that it is a little tender. In most localities this will not detract much from its merit, for if properly protected as thrifty Rose-growers at the

north always practice, it will bear our winters unharmed.

In addition to the great beauty of this crimson Rose, it has the quality of fragrance in an eminent degree, a character of no small value in the estimation of rose-lovers, and it answers to the ideal Rose of Miss Landon in her "Legacy of the Roses."

Plant the green sod with the crimson Rose,
Let my friends rejoice o'er my calm repose;
Let my memory be like the odors shed,
My hope like the promise of early red;
Let strangers share in their breath and bloom,
Plant ye the bright Roses over my tomb.

Another excellent character of this variety is its continual blooming habit. It blooms freely the second time, and so is a true remontant. Thus there are combined in this Rose some of the most desirable qualities. Its color is described as crimson maroon, very rich and strong. The flower is usually of medium size, semiglobular and full. Louis Van Houtte is not an old variety, having been sent out in 1869. It was raised by François Lacharme at Lyons, France, one of the most celebrated rose-growers of our time. Until the present there has been no opportunity to notice in these pages his death, which occurred at Lyons on the 5th of last November. Our lamented rosarian, Ellwanger, in his book "The Rose" places Lacharme first in the order of merit among rose-growers, saying, "—

has sent out fewer poor or indifferent sorts than any large grower, and mentions some of the most notable of his raising, such as, Alfred Colomb, Anne de Diesbach, Baronne de Maynard, Boule de Neige, Catharine Soupert, Captain Christy, Charles Lefebvre, Coquette des Alps, Coquette des Blanches, Countess of Serenye, Hippolyte Jamain, Jean Soupert, Julius Finger, Louis Van Houtte, Mme. A. de Rougemont, Mme. Lacharme, Mme. Lambard, Pæonia, Salet, Victor Verdier, Xavier Olibo. Truly a splendid list, the best of a greater number. He introduced his first variety, Ernestine de Barante, in 1844, and it still ranks high. The French journal, *Revue Horticole*, says 'he was one of the bright and persevering cultivators who have contributed much to bring the Rose to the point of perfection where it is to-day.' He was in his seventy-first year. The sentiment of Miss Landon's verse is appropriate to him in connection with the particular Rose which we have now especially considered, and such other beautiful crimson varieties as Alfred Colomb, Anne de Diesbach, Charles Lefebvre, Hippolyte Jamain and Xavier Olibo, all of his own raising.

The only Rose of American origin that will compare in color and other valuable qualities with Louis Van Houtte and the other varieties above mentioned is Marshall P. Wilder. Our readers will remember the criticism on this variety which appeared in November last in this MAGAZINE from an English source, claiming the exact likeness of Marshall P. Wilder and Alfred Colomb. That they have great

resemblance, and in fact are nearly alike, there is no dispute, but that their origin is different there can be no doubt. And on this point the critic himself does not pretend to decide, but says with fairness: "It is not incredible that there may have been raised in America a seedling in all respects identical with Alfred Colomb, for there is no lack of recorded cases of such coincidences." We are assured by Ellwanger & Barry that in regard to this matter they can only assert what they have published about it from the first, which in their own language is as follows: "It was raised by us from the seed of the Gen. Jacqueminot, and has flowered five seasons, giving us ample time to judge correctly of its qualities. It is of vigorous growth, with healthy foliage; flowers large, semi-globular, full, well-formed; color, cherry-carmine, much like a light-colored Marie Baumann, or a shade deeper than Marie Rady, and very fragrant. In wood, foliage and form of flower, it resembles Alfred Colomb, but the seedling excels that famous variety in vigor, hardiness and bloom. The past season it continued to bloom profusely long after the other remontants were out of flower. In brief, it may be described as an improved Alfred Colomb, and as good a Rose as has been raised by any one. It is undoubtedly the best American Rose yet offered, and the finest of its color."

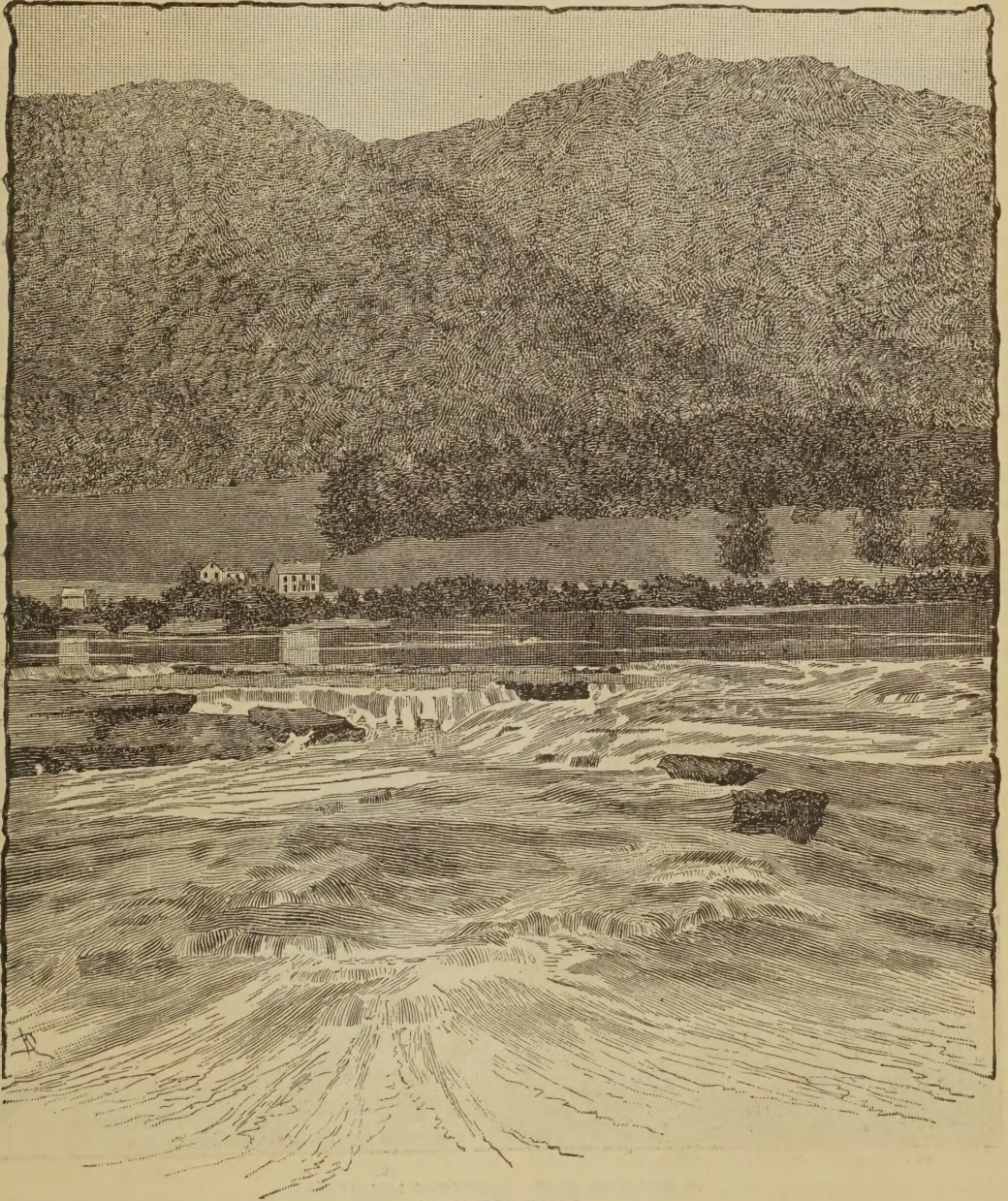
We believe it will be found that the points of superiority over Alfred Colomb, claimed for Marshall P. Wilder by its originator are well founded and eventually will be acceded by all.



BOTANIZING ON THE GREAT KANAWHA.

Fervid and sultry fell the summer heat, day after day, in the Ohio valley. We seldom made a visit to the almost unbearable city, and even our usually cool and pleasant suburban home was scarcely bearable. The daily papers were full of sad incidents connected with the suffer-

this land of drought and fiery heat, and take refuge in the cool mountains." Not so very far away, for the dragon, "business," must have his due attention at times, and a day's or night's railroad ride only, must separate us from such an imperative taskmaster. With that



KANAWHA FALLS.

ing caused to both man and beast by the extreme heat, and often we would lay them aside with a shudder, and a feeling that the world was almost burning up around us. The gentle, blessed rain, too, was denied us, and dust and discomfort had undisputed reign.

Then it was said, "suppose we leave

proviso, I was allowed to select our place of refuge, and a mere chance led me to choose Gauley Bridge, at the head of the Great Kanawha.

We came in the middle of July. The hot night's ride on the Chesapeake and Ohio Railroad, from Cincinnati, breathless, dusty and close, followed by the

blue, serene day in the mountains, seemed like one of the transitions in HAGGARD'S stories. For days I cared to do little but feast my eyes on the lovely rivers, spreading before the mountain home we had found. These were the Gauley, coming down with ever clear, sparkling water from the north, and the New, from the richer, more alluvial shores of North Carolina, and both uniting at our feet to form the Great Kan-

but the stratas so often lie horizontal that the moisture is retained, and trees and plants grow to the very summit, of ascents four or five hundred feet high.

Over the railroad, which winds around the base of Cotton Mountain, the bare cliffs hang perpendicularly some two hundred and fifty feet, too steep altogether for trees; but nature still continues her decorations, for multitudinous Ferns and running vines spring up in



ALONG THE BASE OF COTTON MOUNTAIN.

awha, coursing some one hundred and thirteen miles down to join the Ohio.

Just at the junction of these rivers the waters spread out, and, embosomed in lovely wooded mountains, rising abruptly from the very shores, the broad sheet seems like a secluded mountain lake.

The mountains are really very rocky,

every crevice, and even here trees crown the top of the mountain above the cliffs.

In such a wealth of vegetation I found, as a matter of course, many new flowers that were new to me.

I had always been a lover of flowers in themselves, but the science of botany was a sealed book to me, and my eyes

were entirely untrained to detect the many wonders of construction and the consistent, uniform laws which distinguish and govern the growth of plants.

I had a silly notion that I should find botany a tiresome, pedantic study, principally made up of learning long names and tedious distinctions, and that botanic authors themselves often became confused in their own classifications. I have not yet become converted to another opinion on this latter point. However, for the benefit of others who, like myself, might be induced to study botany a little without a guide, I will give some of my experience for the past few weeks.

In packing a box of books for summer use, I happened to put in a copy of

dodendron, which they called the "Big Laurel," and the real Laurel, or Wild Azalea, with its snowy flowers, the Chittim wood, and many others of which I could now only see the seed-vessels. They seemed to think the mid-summer and late flowers scarcely deserved names in comparison with the earlier ones.

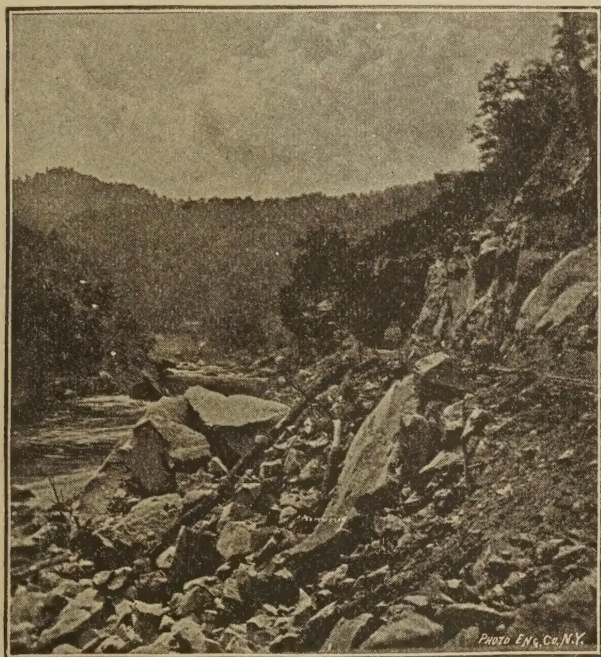
I have no doubt a residence here, in May and early June, would be perfectly delightful to the flower-lover, and if fate ever grants such a boon to me, I shall duly appreciate it.

The first flower I analyzed successfully was a lovely little pink blossom which we found, one day, growing in the sandy soil of the riverside, and almost at the water's edge. The river was low, and its width

of, perhaps, a third of a mile, was spread out in brawling currents over its rocky shoals, and with islands of water grasses and aquatic plants that almost tempted one to wade out to them over the ledges. Here and there you saw a projecting rock standing high and dry above the water, and rarely a long-legged crane would stalk about on the most distant of these, and hunt for fish in the little pools below.

I loved nothing better than to take book or water-color pencil and spend hours on this bank, under the shade of a clump of Black Birch, and on a big sand-stone rock which probably had fallen from the mountain above, years and years before. And here I found

my little flower, almost under my feet, and blooming as freshly and pinkly as if it were choicely sheltered, and not openly exposed to the wandering foot of every passer-by, whether man or beast. It was a six-petalled flower, as pink as a wild Rose, and with a wonderfully perfect center with its six stamens and three golden pistils, and a curiously twisted flower stalk. The plant had evidently been cropped by some passing cow or sheep to the very root, and this one little stalk was glorified with one flower and one bud, a late indemnification to the plant for its early bereavement. To that, I afterwards found, did I owe my acquaintance with it, for this season, at



NEW RIVER AT SHOOFLY TUNNEL.

Wood's *Botany*. This was done with no definite purpose, but just by chance, I, little thinking how very frequently I should make it my companion, for, with my pocket microscope, it has gone on many a row and ramble with me.

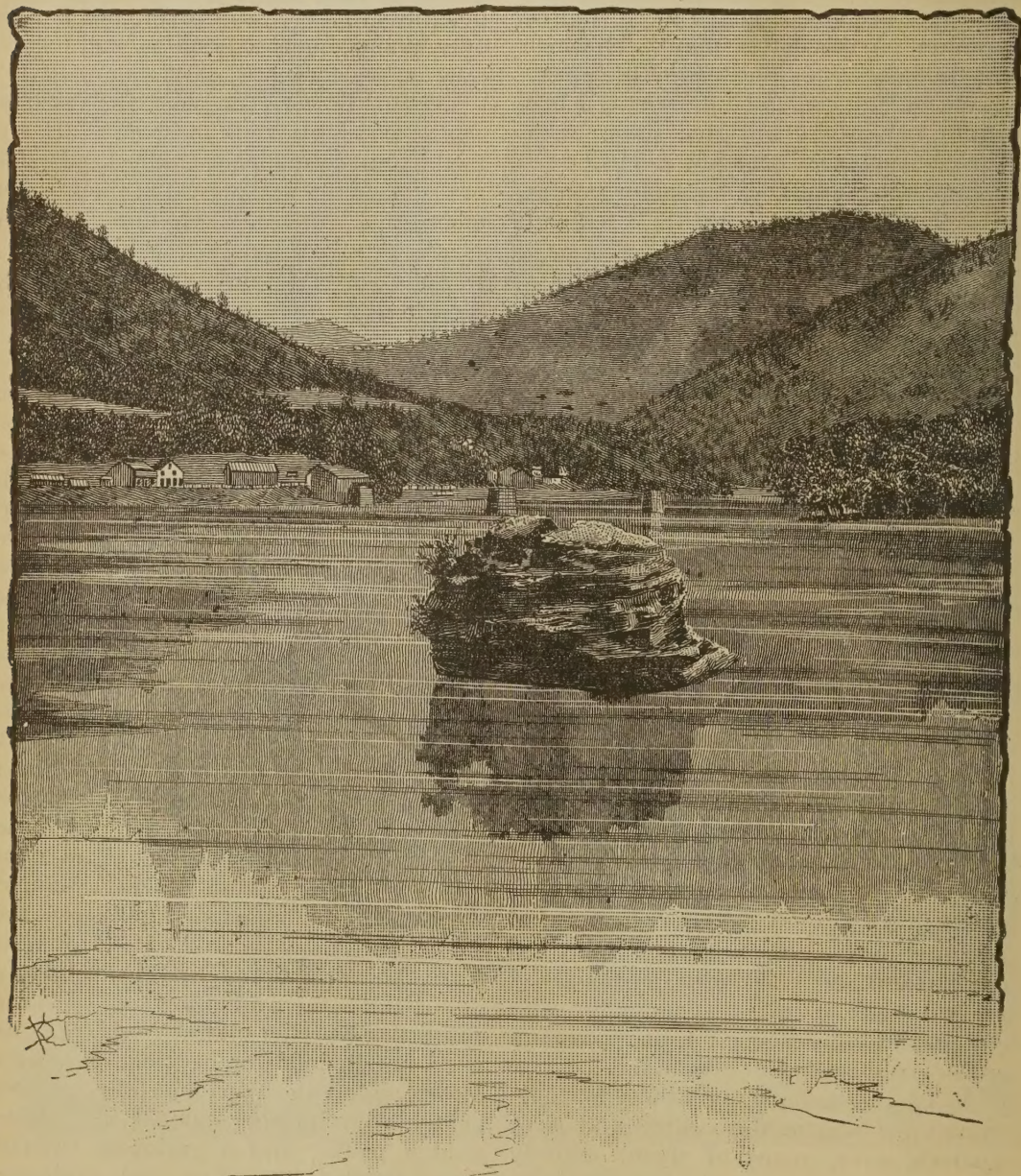
As I said, the flowers on these Virginia mountains and in the valleys and river courses, were, many of them, entirely new to me, and even the people living here had no names for many of them, even for some that grow as plentifully as Dandelions in our spring fields and lanes.

They had many brilliant and beautiful flowers of earliest summer, but all out of bloom now, of which they were properly very proud; of such were the Rho-

least, for the real time of blooming was long gone by. No one at our boarding house knew it, though all admired it, especially when a look through the pocket glass emphasized all its beauties. One lady ventured an opinion that it was Pipsissewa, or Prince's Pine, an idea which I at once rejected, for did I not know, at least, that wild flower in my

the Lilies, and flowering in June. A flower truly worthy of any florist's attention. I transplanted this specimen, and had the pleasure of seeing one bloom at home.

Feeling quite elated with my victory in this case, I next attempted a plant of rather coarse growth, found abundantly by the country roadside, from two to



JUNCTION OF GAULEY AND NEW RIVERS.

New England girlhood? So I went, at last, to my botany. I first found, by the parallel-veined leaves, that it must be an endogen, a flowering endogen, and then, after patient search and much blundering, I finally found it, "Twist-stalk," (*Streptopus*), and put, by WOOD, among

three feet high. It had leaves resembling the Locust in form and manner of growth, and a profuse crop of gay yellow flowers, growing in a fascicle, or pyramidal cluster, on the ends of the branches. On the leaf-stem I discovered a little roundish gland near the base. The flowers were

irregular, but not truly papilionaceous, or of the butterfly order, like the Sweet Pea, for instance. No one knew what to call it, not even a common name had they for it; but, after some searching, I determined it to be the American Senna, *Cassia Marylandica*, and medicinal as its better known cousin across the seas. I have since found two more varieties, *C. Chamæcrista*, or Sensitive Pea, and the Partridge Pea Senna.

Another plant, which puzzled me a good while, was finally proved to be the Moth Mullein, *Verbascum Blattaria*. I suppose I ought to have known that, but I did not, nor did any one here, and, as yet, I have not discovered why it is called Moth Mullein. What rare beauties the glass reveals in the soft filaments of this flower, clothed in violet wool.

I found one specimen of a flower which, like my Twist-stalk, seemed belated, and which I venture to call the Soapwort Gentian, but as I found but one specimen, I am not so very sure of it.

The purple and white *Ageratum*, and the Blackberry Lily, *Pardanthus*, grow most abundantly in these mountains, and were analyzed, although I already knew them.

I think I was happiest of all when, one day, in a shady path running up the side of the Gauley River, I found two fine specimens of Indian Pipe, *Monotropa*. Pure, waxy, spirit blooms, with not a trace of the green garb which all other plants must put on as their common robe, and looking as if one warm sunbeam would melt them away, like an icicle. I kept them in the shade of a close box, and exulted in them to my heart's content, ruthlessly counting all of their waxy petals and golden anthers; but the beauty was indeed short lived;

the next morning showed them blackened and decayed.

One day, we rowed close to the shore for a mile on that basin of the New River, to which I have alluded, and which is very deep, and at least a fourth of a mile wide, and more than a mile long, to a place where the rocky gorge of "Narrow Falls" crowds the volume of water into a narrow passage of a few yards. On either side tower cliffs hundreds of feet high, but for some fifty feet above the water's edge is a dense growth of Alder, Winterberry and other shrubs, interspersed with some fine trees of Sycamore, Water Birch and a few Elms and Oaks. On these Elms is found the Mistletoe. Beneath these is an undergrowth of Wahoo, Laurel, Holly and many varieties of the Sunflower family, Button-bush, wild *Ipomœa* and numerous other plants; while running to the sandy edge of the shore and out into the water I found magnificent banks of the Arrowhead Lily, *Sagittaria variabilis*, four different varieties, and in the river itself the Grassy Arrowhead, *Sagittaria graminea*, was growing in beautiful grassy clumps, and sending up its white, waxy blooms, on their own stalks, in August.

How many new acquaintances I have made this summer, and I have seen some very pretty things that I cannot yet name, but which I trust the future will make known to me. And what an ever fresh interest it has given to every walk and even every ride, over these mountain roads, where Ferns and running vines almost overhang the highway. It seems to me that I cannot tell a tithe of my delight, yet I trust this little that I have said will induce others to try the same inviting path.

LOUISE SAMSON.

THE BIRCHES.

In passing through the country during the winter months, we cannot help noticing the important part taken by the White Birch, *Betula alba* var. *populifolia*, and Canoe Birch, *Betula papyracea*, in making up the winter landscape.

The White Birch, with its tall and thinly-clad trunk, is found in all soils from gravelly upland to peaty swamp. It is everywhere characteristic, seldom

varying from its usual form, unless bent over, as it often is, with a weight of snow or ice, and remaining in that position in marked contrast to the upright growing trees about it. We see it in woods, swamps and pastures, outlined against an evergreen background, grouped among darker hued trees, or covering large sections of barren land with a dense growth.

The tree is short-lived and of small growth, but occasionally, in a favorable situation, it becomes ten inches in diameter, and thirty to forty feet high; it is then one of the most interesting of our native trees, with slender, drooping branches, and a pure white bark, relieved by patches of a dark shade where the branches join the trunk.

Growing with the White Birch, and to the northward, largely taking its place, is the Canoe Birch; it is a large-growing tree, and has a pure white bark and upright growth. In the summer, when covered with its own foliage, and surrounded by other trees, the white bark gives a peculiar charm to the landscape, as it is seen through the foliage in patches and lines, here and there.

In winter, groups of these trees are almost dazzling in their whiteness when stripped of their leafy covering, but they give a marked character to the winter landscape in our northern woods, and when distance blends their severe whiteness with the surroundings, they form charming pictures.

The Red Birch (*Betula nigra*), is, in its way, equally as conspicuous as its white-robed sisters. It is a rare tree, and is found growing most abundantly along our river banks, where it can push its roots into the cool, running water. Young trees have a dark red, close bark, but as they advance in age and size, the thin outside bark pulls off and hangs in flakes to the trunk, and contrasts strangely with the light reddish-buff of the bark beneath. The branches are long and slender, pushing upwards and outwards with a graceful sweep; the foliage has a silvery hue, and as the slender branches are swayed by the wind, it is one of the most graceful of our Birches, and seems proud of its charms, for on the river banks it will bend far over where it can see its own image reflected in the water below.

The Yellow Birch (*Betula lutea*), is common in our moist woods, and is also conspicuous on account of the shaggy appearance of the trunk, covered as it is with thin curly flakes of yellowish bark.

The Black or Cherry Birch (*Betula lenta*) is found growing with the Yellow Birch, and is similar in character to it, but has not the shaggy bark; it makes a fine large tree with oval outline and slender

branches, and is a valuable timber tree, the wood having much the appearance of Cherry when finished. The bark on the young twigs is a rich, glossy brown and is very aromatic, having the pleasant taste of the Checkerberry.

We have two interesting dwarf forms of the Birch, both with slender branches and small leaves; one, the Low Birch (*Betula pumila*), grows in bogs to the northward, the other, the Dwarf Birch (*Betula glandulosa*) is found on the higher mountain tops of New York and New England.

Trees that are so attractive in their native homes are certainly worthy of a place in our ornamental grounds and along street sides.

The White Birch is short lived, but will grow on the poorest soil, and is a very graceful small tree; it would be valuable to plant in groups of trees where its place will be taken by others when they are of large size.

The Canoe Birch is a really valuable ornamental tree; it is long-lived and free from insect enemies, with rapid growth and pleasing foliage; its great value is in its pure white bark which is especially conspicuous on trees of medium size. Young trees are quite symmetrical, but as they grow older the top breaks into a more irregular outline and the staring whiteness of the bark is relieved by occasional patches of black and brown. Planted sparingly among other trees the Canoe Birch makes a pleasing contrast.

The Red Birch is seldom seen in cultivation. It is rapid growing, and young trees are clothed to the ground with branches, making a tree broad at the base and tapering to a point; this conical habit is retained, as it becomes older and loses its lower branches. Its many good qualities should give it a prominent place in ornamental planting.

The Black and Yellow Birches are similar in outline, with broad, oval heads, and dark colored trunks and branches; fine trees for lawn or park.

Several of our most popular ornamental trees are varieties of the European Birch.

The Cut-Leaf Weeping Birch is now seen in every town. Young's Weeping Birch is becoming common, the Purple and the Pyramidal Birch are frequently met with in ornamental grounds. These are

all beautiful and interesting varieties, very valuable for lawn planting, and we may look for equally valuable varieties from our native Birches.

For those wishing to give their places a distinct character, the genus *Betula* is particularly well suited; there is a great

variety in size, habit and foliage, and by a combination of the wild forms and the horticultural varieties a charming and interesting arrangement could be made, and no prettier name could be given a home than THE BIRCHES.

WARREN H. MANNING.

THE ANNUAL AGROSTEMMAS.

The annual *Agrostemmas*, or, more properly, *Viscarias*, form, when taken together, a genus of remarkably free-flowering plants that are deserving of a place in every mixed border, on account of their being so valuable where cut flowers are in demand. They are plants whose merits are as yet but little known, but are well deserving of a little more care and attention than has been bestowed upon them of late. They are plants easily grown, doing best in a deep, well enriched, sandy loam, and the small, various colored flowers, which bear a considerable resemblance to single Pinks, are produced in the greatest profusion from July until frost. They belong to the natural order *Caryophyllaceæ*, and are hardy annuals, growing from one and a half to two feet in height.

The *Viscarias* are plants easily cultivated, and do best and flower much earlier when the seed is started under glass; so, to effect this desired object, the seed should be sown about the first of April, in a well drained pot or pan filled with light loamy soil. Sow the seed thinly, cover slightly, and place in a warm, moist situation, as close to the glass as possible. As soon as the young plants are

strong enough to handle, they should be transferred into shallow boxes filled with moderately enriched loamy soil and placed in rows an inch and a half apart each way. Keep them close and moist for a few days, or until growth commences, then remove to a cold-frame, and grow on until the weather becomes warm and settled, when they can be transferred to the mixed border, or planted out in beds. If planted in beds let the plants stand about one foot apart. Not only do the plants grow much better, but their flowers are much larger if given a little room. The seeds can be procured in separate named varieties or in mixed packets, and, as they are quite small, a single packet will produce a quantity of plants. For the benefit of those who desire to grow the most distinct and desirable varieties, I have prepared the following descriptive list:

Agrostemma *Burridgii*, white.

A. oculata, pink, with a rich crimson eye.

A. cardinalis, bright red.

A. elegans picta, center of flower bright crimson, gradually merging to bright scarlet, with a pure white margin.

CHAS. E. PARNELL, *Queens, N. Y.*



NATIVE ORCHIDS.

Not with *Sobralias* or *Oncidiums*, with flower-scapes twenty feet long, or with any of the gorgeous tropical forms, has nature favored us, here, in Western New York. She intends us, at the North, to be thankful for smaller favors. Though our species are so small and modest beside the costly exotics of their order, they are still rich and strange, and beautiful; their comparative rarity is an added charm, Dandelions and Daisies are cheapened by their vast multitudes.



ORCHIS SPECTABILIS.

A woodland ramble is a success if it leads you to a clump of Orchids in bloom. You are a true familiar friend of the woods if you know of many localities of any of the species. The peculiar fragrance of bruised wheat blades is not shared by the meadow grasses, neither do all Composites smell alike; but the broken stems or roots of all our Orchids have the same scent, a strong drug-like aroma, showing, perhaps, their close relationship amidst their diversity of season, size, structure and habitat.

The spring is about to become the summer; the Sugar Maple's bells withered some days ago, and every breeze scatters the Apple blossoms. It is time to look up the Showy Orchis, *Orchis spectabilis*, the first of its tribe, or one of the first, to bloom. I mostly find it at the foot of steep banks along our little streams, not because it is aquatic, but because it likes the soft, rich mold formed from the drifts of autumn leaves that collect in such places. How firm and clear-cut are its dark green leaves, often growing in thick patches; the scape rises six inches, the bracts as smooth and dark as the leaves. The tasteless nectar in the end of the long spur is plainly seen through its transparent case, but no insect can reach it, except by gnawing a hole half way down the spur, and most of them are opened in this way. The flowers have a sweet, though faint, fragrance, and as you look about, you feel that beauty is everywhere.

The Mandrakes, *Podophyllum*, growing all over the steep banks are in full bloom, their waxy white, fragrant flowers presented at all angles as you look through their crowded stems. Away through the forest, as far as the eye can reach, the earth is tinted with purple Phlox; the stream, not greatly shrunk, fills the air with its melody; thrushes and oven-birds are singing; all is fresh, and new, and bright.

True, the spring beauties—mere wreaths of rose-tinted snow—have vanished. The Anemones are out of bloom and the Adder-tongues are ripening, but these little first-lings do not affect the general view. The Ferns are rising thick and fast above them; ripeness and decay are minute quantities as yet. The flowers of this Orchid, with their white lips and purple hoods, suggest the Mint family; the pollen masses, though welded to the column, are in the same place as a Mint's anthers. The little plant is not so showy as its name indicates, it is, however, rarely delicate and beautiful.

Coming at the same season, or a little later, are the *Cypripediums*, *C. parviflorum* and *C. acaule*, the latter the largest flowered and boldest Orchid in our list; its stemless blossoms are often two feet from the ground. It chooses to grow on hard, dry soil, along with Oaks and Pines and Hemlocks, whose resinous scent is in the air, as you pass slipping upon the thick carpets of Sedge which cover the slopes.



CYPRIPEDIUM PARVIFLORUM.

Now a glint of color comes through the brushwood, but it proves to be a clump of Cranesbill (*Geranium*), and again you are deceived by the fading *Trilliums*, *T. grandiflorum*, the flowers of which turn from white to red as they grow old. But, here it is, at last, the stemless *Cypripedium*, *C. acaule*, two great leaves close to the earth, and a tall scape with a single flower. The long wavy petals are brown at their tips; the lip is a great pouch, dull red behind and white in front, though so thickly laced with crimson veins as to appear red; it is nearly scentless. The yellow species, *C. parviflorum* is less particular as to its location. You will find it on



CYPRIPEDIUM ACAULE.

broad opening whose inflected edges hinder the visitor from returning. The lips of *C. acaule* are slit the whole length and close upon an insect with a spring. In both species the insect is supposed to creep through a narrow hole at the base of the lip where the pollen masses partly block the way, and a portion of which is carried away by the intruder and serves to fertilize the next flower that is visited. It seems hardly worth while to use so much art to fertilize plants whose seeds are so delicate. Not one in a thousand ever grows. The Mouse-ear, *Antennaria*, has a seed almost as small, but it spreads everywhere. A patch of Lady's Slippers will shed countless seeds year after year, and the old plants are much more likely to go than young ones to come. The lens which so quickly gives parts and proportions to most small seeds, makes these look more than ever like chance bits of rubbish.

SPIRANTHES
CERNUA.

hard, dry hillsides or upon islets of sphagnum amid the black waters of the marsh, or in the soft mold of rich woods. Its flowers are strongly scented, perhaps hardly fragrant. The *Cypripediums* are said to require insect aid to effect fertilization. The pouch of the yellow species has a



ORCHIS GRANDIFLORA.

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A month, or more, and the purple *Orchis grandiflora* is blooming in spring runs and marshes, a tall, stately plant with smooth leaves and a dense spike of flowers with fringed petals, rather small individually, but showy in the mass. It has less the looks of an Orchid than most of its tribe; it might be thought to belong to other families from a little distance.

A striking plant is the Shin-leaf, *Orchis orbiculata*, in dense shades, with two great rounded leaves lying close to the ground, and a tall scape with a long spike of

greenish flowers; but other smaller related species are hardly visible among the Solomon's Seals and Pyrolas.

It is August; the season has culminated; the Mandrakes, whose bloom accompanied the Showy Orchis, have ripened their fruit, and the fields are fading. Now comes the long, gentle descent to the winter. In the damp mold of the thickest



GOODYERA PUBESCENS.

woods you may now find a cluster of dark purple scapes a foot or two high, bearing a spike of Orchid flowers; it is the Coral-root, *Corallorhiza odontorhiza*. It has no leaves, only a few brown scales are clasped round the stem. Why do most plants without green foliage wait for the latter summer? The Indian Pipe and the Pine-sap, *Monotropa*, the Beech-drops and Broom-rapes all belong to the declining year. The lip of the Coral-root has spots of the richest crimson, but they are almost microscopic. Its strange leafless habit is its chief interest.

Later still, when the Asters are in bloom, and the woods resplendent with autumnal tints, we go forth into a land strangely silent. As I walk through these stony pastures, a booming echo from the caverns in the bed-rock beneath my feet is almost the only sound, and here is the latest Orchid flower of the year, the Lady's Tress, *Spiranthes cernua*, a little, grass-like plant with three rows of minute white flowers arranged in spirals around the stem. An inconspicuous little thing, it would be almost invisible except here on this bare brown sod.

The Orchis grandiflora likes deep bogs that tremble far and wide beneath your tread, but here the soil is hard and lean, and hungry, a gaunt covering stretched over the strata of solid rock. In winter, if the earth is bare of snow, whether dumb and frozen, or moist and fragrant beneath the southern rain, you may find our two evergreen Orchids, the Rattlesnake Plantain, *Goodyera pubescens*, and the Putty-root, *Aplectrum hyemale*. The first with a rosette of leaves close to the ground, which are laced all over with veins of pure white; the only variegated plant of our woods, so far as I know. The latter has a single large leaf which lies flat on the earth, looking faded and almost dead the year round. Of course, you may find them in the summer, when the *Goodyera* has a slender spike of minute white flowers in a spiral, like the Lady's Tress, while the *Aplectrum* shows a brown, leafless scape, like the Coral-root's coming up at a distance from the leaves; but they are less conspicuous then among crowded herbage.

Thus, any day in the year, unless the snow is deep, you may find some member of this family, and even then you can gather the capsules of the Coral-root.

E. S. GILBERT, *Canaseraga, N. Y.*

MY PEAR ORCHARD — A REMINISCENCE.

I returned home, spending one raw, windy day at Niagara Falls, and waited somewhat impatiently for the coming of my trees, and got, in the interim, considerable experience in the delays of freight which was characteristic of those days.

Finally, after going to the station, four miles distant, several times, and waiting eighteen days after shipment, they arrived—three large boxes and one smaller one, weighing 1,800 pounds, with a freight

bill of \$12.80. Upon opening them I found that my list had been scrupulously followed with the exception of one variety of five dwarfs, and years proved every kind true to name, a fact for which I have always respected the firm which furnished them.

Perhaps it was the fidelity with which the order was filled that accounted for the size and appearance of the trees. Some of them (the standards) must have

been at least six years old, and two or three varieties had been double worked, *i. e.*, after the trees had obtained the size of a broom-handle another variety had been grafted in at the height of about four feet. This was the case with the White Doyenné, Winter Nelis and Beurré Bosc. With their big stems and little tops they resembled a clumsy black Willow stock with a one year Kilmarnock head.

My knowledge of trees was very limited, and possibly I should have made a better selection myself as many of the varieties were such as probably were not kept in stock by three other firms in the United States, and the nursery business had been seriously affected by the four years of civil war, and there was not such an abundance of young vigorous Pear trees as were to be obtained ten years later. By a mistake of mine in first forwarding a partial list of sixty trees and then including the same in a complete list, without so mentioning in my second order, I had inadvertently purchased sixty trees more than I wished to plant. These I succeeded in selling at an advance of twenty cents each, to a tree-dealer who had been disappointed in getting Pear trees. He wanted big trees, so I let him have all my Winter Pound but two, all the clumsy White Doyenné, and all the Seckel and Flemish Beauty; a streak of luck for which I have been thankful ever since. The dealer told me the trees gave wonderful satisfaction, they were so big. This sale of trees by which I made all my freight but eighty cents, led me to look into the tree jobbing business and to follow it for a few years in connection with starting a nursery. A volume might be written on the crudeness of the horticultural knowledge of that day, much of which I detected as I became more conversant with books, and I will give a single illustration: The most prominent nurseryman in this region sold Balsam Fir under the name of Single Spruce and American and Norway indiscriminately as Double Spruce, the name being derived from the growth of the needles upon the twigs. For location of my Pear orchard I selected a piece of level ground north of a neighbor's woods and just south of a low ridge, a very rich, heavy sod at the time, having been a sheep pasture for several years. It is a sandy loam, and I

broke it up deeply, hiring a neighbor to follow with a sub-soil plow, stirring the soil (and sub-soil) seventeen inches deep. Deep as this was it was not nearly deep enough, as many of the standard roots were twenty inches long, while the dwarfs which I had foolishly ordered of a three year size, were from twenty-four to twenty-seven inches from the budded point to the bottom of the roots. It was no small job to set one hundred and forty-three standard and two hundred and ninety-five dwarf trees in the tough sod, but I accomplished it before June 1st, and had the satisfaction of seeing all but three put out leaves and commence to grow.

The ground was planted to Corn and the following spring the standard portion to Doolittle Raspberries. The planting of the standard trees being in the quincunx order, each tree being the center of six others eighteen feet distant, this made the rows fifteen feet apart lengthways of the piece, and the Raspberries were planted in this direction, one row with the trees and one between, making them seven and one-half feet apart.

Raspberries were not very generally grown for market at that time and brought good prices (\$4 to \$5 per bushel), and I should have made the acre I planted quite profitable had I been as honestly served by a New Jersey small fruit grower as I was by E. & B. I planted four rows from plants grown by a friend that were genuine, but two thousand plants ordered from a party less than a dozen miles from Philadelphia produced a berry much smaller than the Doolittle and nearly two weeks later. What the variety was I have never been able to determine, but their small size made them expensive to pick, and their lateness brought them into competition with Huckleberries, so I lost in two ways. The Raspberries were maintained for eight years, during six years of which the Pear trees were regularly cultivated, and in this time I lost about two hundred of the dwarf trees, seventy-five of which were Louise Bonne, and twelve standard, the latter being eight Swan's Orange (all I had) and four Madeline. During the next three years the orchard was pastured in spring and fall, and then wishing to fill the vacancies I plowed it up and planted to Corn, planting Gregg Raspberries the following spring. The season was one of excessive

drought, and the Raspberries nearly all failed, and as the two seasons' cultivation caused the blighting of one Bartlett, twelve Sheldon, and one Boussock, I did not renew it, but filled the vacancies mostly with Clapp's Favorite and let the orchard lapse into grass. Before I plowed, the Sheldons shed their leaves, and the fruit cracked; but the year of cultivation in Corn I got a good crop, and the following year the trees blighted, so I was left in a quandary in which I still remain. I still have over 100 standard trees of a size that should give me an average of two or three bushels per tree. Of these there are 15 Bartlett, 17 Lawrence, 15 Boussock, 11 Buffum, 6 Tyson, and the remainder are Winter Nelis, Beurré d'Aremberg, Beurré Bosc, Sheldon and two each of Winter Pound and Madeline. The Pound is absolutely worthless, and I wonder that reputable nurserymen will continue to propagate and sell this variety. The Madeline is the best very early Pear I know of, but it will blight, and continue to blight, barely maintaining existence by one or two straggling branches at a time.

Bartlett, Boussock, Buffum and Lawrence have blighted very little, and set fruit enough for a good yield, but so many of them are defective from the stinging of the curculio (Pear curculio I suppose) as to render the fruit valueless. A good, rank, vigorous growth, I believe, will push the fruit along so as to outgrow some of the blemishes, but this can only be obtained with manure and cultivation, and the result would be what I have seen in a dozen orchards now numbered with the past. Under the circumstances I am

at a loss what to do, but believe that I shall build a pig-tight fence and put in some pigs in the spring, letting them root at their own sweet will. In addition, I shall manure the ground, although it is now good enough to bear heavy Corn. Another plan has suggested itself, and that is to manure a narrow strip between each two rows and work it up with a disk harrow and cultivator, and plant a couple of rows of Corn. This would be a medium course between no cultivation and an entire working of the ground, and might result in success.

Some varieties, as the Aremberg, Sheldon and Tyson drop their leaves prematurely, so as to destroy the size and flavor of the fruit, and it is a trouble for which I have seen no reliable remedy. Perhaps some readers of VICK'S MAGAZINE can give some experience that will help me turn my Pear orchard to a source of profit.

In conclusion I would say to anyone contemplating a Pear orchard, do not put out too many kinds. The following varieties do well in Northern Ohio, and ripen at a period when there is a market demand: Clapp's Favorite, Bartlett, Boussock, Buffum, Anjou, Keifer and Lawrence.

Do not plant on sod ground, but cultivate the ground one year previously.

Plant three year trees, and plant crops that require only a brief season of cultivation, such as early Potatoes or early Sweet Corn.

Finally, do not plant adjoining a piece of timber, as I think the curculio is worse in such a locality.

L. B. PIERCE, *Summit Co., O.*



FOREIGN NOTES.

A TRIP IN FRANCE.

An English gardener taking a holiday in France, early in August last, gives an account of his trip in the Gardeners' Chronicle. Arriving at the marketplace in Orleans he found several things worthy of notice.

Of *Clethra Alnifolia*, the White Alder, or Sweet Pepper plant, of the eastern United States, there was a quantity of nice dwarf, bushy plants, beautifully flowered. It seems strange that so pretty a plant, and one, moreover, with flowers so sweetly scented, should not be seen more frequently in pots in this country. Basil, too, was on many stands. Both here and in many parts of Germany, it is grown for its neat bushy habit, and its fragrant foliage. Bouvardias, well done, were plentiful, as also a white-flowered *Lantana*. Fuchsias were very well grown, but the varieties were rather poor. The Japanese *Hydrangea paniculata* was thoroughly well grown. Perhaps the plant, however, which most attracted our attention was one of the hardy perennial *Statice*s with its light, airy, much branched inflorescences of small blue and red-tinted flowers. * * * *

Between Vouvray and Mont Louis, on both sides of the Loire, there was bordering the railway platforms a long, broad band, in fine flower, of the old-fashioned *Valoradia plumbaginoides*, perhaps better known as *Plumbago Lar-pentæ*, a blue flowered Chinese perennial which created some sensation when it was exhibited and sent out about a generation ago. We never saw this so profusely in flower before; probably the average English summer is not hot and sunny enough for the successful cultivation of this charming plant. * *

From Bordeaux a day was spent in visiting the vine-growing country between the Landes and the Garonne. Here, at least, *phylloxera* is unknown, and the vineyards looked the picture of health. Various methods of culture seemed to obtain; on some properties the rows were six feet apart, and the vines were trained to stakes, and along horizontal

wires as high as a man. The majority, however, were grown in rows about three feet apart and fastened to stakes three feet high, and two lines of wire stretched the length of the rows. In the famous vineyard at Château Margaux some 700,000 vines are grown as described in the last sentence, and not a weed was to be seen. Whenever *Oidium* appears, a solution of sulphate of copper and lime is applied by means of a pipe attached to a vessel carried on the shoulders of the workman. The surface of the reddish gravelly soil is kept constantly loose.

Here we were initiated into the mysteries of Medoc wine classification; the first *cru* has three qualities, the second *cru* also three, then comes *bourgeois* and *paysan*, with their three qualities each; and, finally, *artisan*. This year the vine-growers expected, or rather hoped, that the season would turn out a good one, although the crop was not by any means heavy. It seems that until the wine is actually made no one can make sure that any season's crop will produce wine of first rate quality; let a shower occur at a wrong time, and the chances of a first *cru* realizing high prices disappear. On the way back to Bordeaux oxen covered with white sheets to guard against the plague of flies, were plowing between the rows of vines, and presented rather a strange appearance.

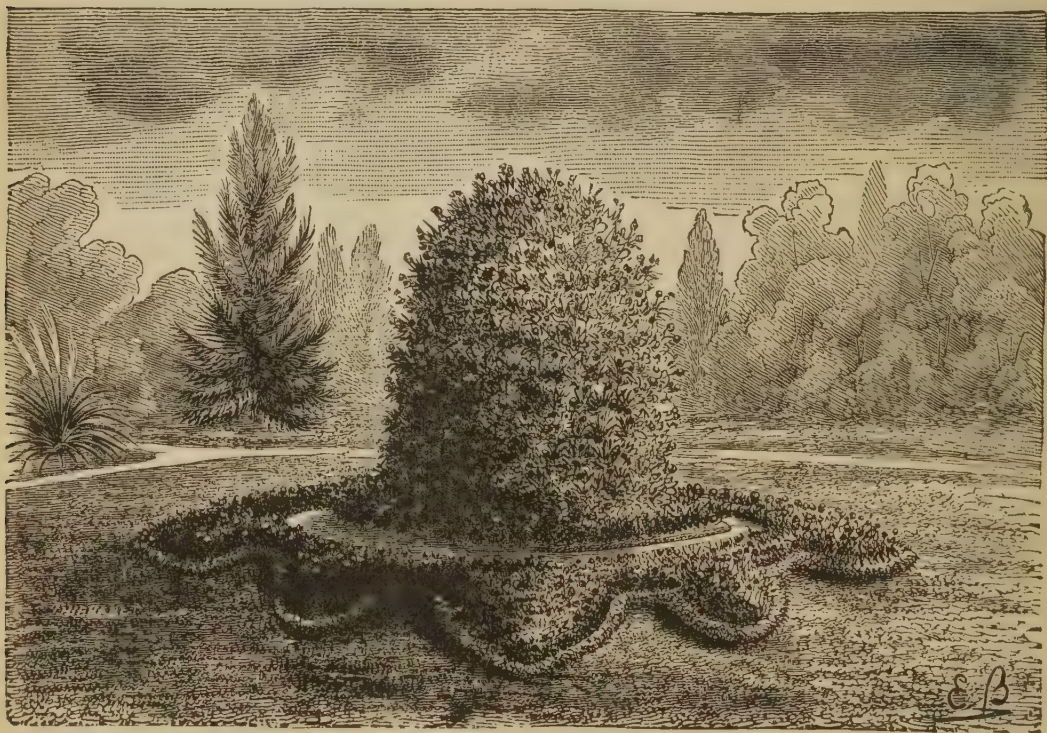
TO DESTROY WORMS ON LAWNS.

The following experience is given in the Gardeners' Chronicle: By using corrosive sublimate, worms on lawns are effectually got rid of. I get one ounce of the substance from the chemist, crush it to a powder, then mix it in ten gallons of water, and pour it on the lawn from a watering-pot, when every worm, large and small, will come to the surface. It is a curious thing that the large worms come first. If used any stronger the worms will not come up. The grass is not injured in any way by the application of this very poisonous substance

A FLOWER BALLOON.

The accompanying illustrations have been prepared from engravings in a late number of the *Revue Horticole* in which this new floral device is described. The Flower Balloon is intended as the center piece of a bed on the lawn. It is suitable only for very large private grounds, and for parks and other large public places, and the finely kept grounds of summer resorts. It consists of a frame work to contain a series of shelves or boxes which, filled with soil, are planted with flowering and ornamental leaved plants.

The base is made in two parts, of T shape bolted together. Upon the base is placed a kind of oak cask, larger at its base than its summit, and with staves or ribs set at wide distances in order to allow the free passage of rain water, and that from the sprinkling cans. The cask is made in two parts, one with upright staves, and

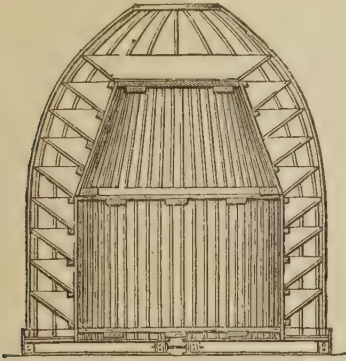


A FLOWER BALLOON, AS A CENTER PIECE FOR A FLOWER BED.

one with staves smaller at the top than at the bottom, the sloping part placed on the top of the other, and fastened together as shown in the engraving. The whole is covered with an iron rib-work made in two parts and forming a great balloon about eighty inches in diameter and one hundred inches in height. The upper extremities of the iron ribs are joined to a large iron hoop, affording space wherein to set a strong Palm or other plant of handsome leafage. Between the cask and the rib-work is placed a series of inclined shelves, fastened at their lower edges to the cask, and at their upper to the iron ribs, and thus forming stages or boxes to hold soil in which to set plants. A balloon of this size requires from eight hundred to a thousand plants to fill it. A balloon planted with scarlet Geraniums and placed in the middle of a large lawn is said to produce a fine effect. But a great variety of plants can be employed, and there is no end to the changes that can be made. Considerable care will be necessary to keep the plants supplied with water, as the soil in the boxes will evaporate it more rapidly than that at the surface of the ground. A firm and level foundation should be secured on which to place the structure. It is, to say the least, a novel affair, and in some places would, no doubt, be very effective; but to be so the idea must be well executed, and the plants have the best of care, otherwise it would be a hideous failure.

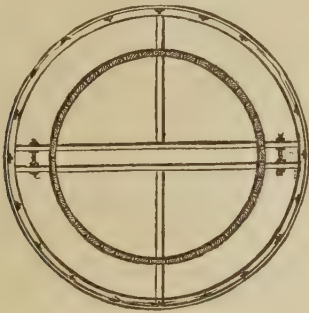
SACRED BO TREE OF CEYLON.

Your Buddhist readers (says a writer in the *Athenæum*) will receive with dismay, as will others with concern the news which the last mail brings from Ceylon. The sacred Bo tree of Anuzâdhapura



VERTICAL SECTION OF FLOWER BALLOON.

(*Ficus religiosa*), the most ancient and authentic relic of Guatama, and probably the most aged tree in the world, has been shattered in a storm. The facts as related by more than one local correspondent of the Colombo newspapers, are as follows:—The district of Anuzâdhapura suffered this year, as it frequently does, from a continuous drought of eight months. On October 4th, the inhabitants were bidden by beat of tom-tom to assemble at the Bo tree and pray for rain. The same night, apparently before the invocation,



HORIZONTAL SECTION OF FLOWER BALLOON.

the storm broke with a violent wind, lightning, thunder, and rain. The main branch of the sacred tree was severed, leaving only a stem of four feet; but whether this is in height or circumference is not stated. What remains of our present information must be of interest to students of ritual. The Bo tree is a semi-sentient being; it is "worshipful" and "ever victorious." Wherefore, when part of it dies, it receives last rites, similar to those paid to kings and priests, the most honored of mankind—it is cremated.

This ceremony took place with full honors on October 6th. Early in the morning two men called *kapuwas* (cutters), arrayed in suits of black, arrived at the tree. "They covered their mouths with black handkerchiefs, tying the ends at the back of their head, and with a small cross-cut saw divided the broken branch." Two tom-tom beaters supplied the music of their craft while the ceremony proceeded. The branch was then sawn into convenient pieces, and loaded in a cart "prepared for the purpose with white cloth ceiling," &c. This was borne in *perahera* (solemn procession) to the Thupârâma Dâgoba, where the cremation of the local chief priests is wont to be held. The ashes were reverently carried to the tank of Tisawewa hard by, and there dissolved. *Le Roi est mort, vive le Roi!* The remnant of the tree now received its appropriate treatment. Women bore water for the bathing of the bleeding trunk, and on the following night the Pirit service, for the exorcism of evil spirits, was solemnly performed at the time-honored site, where the remaining stem, though probably unsightly now, will in time flourish with all the vitality of the *Ficus religiosa*. Meantime, let the *Ceylon Observer* continue to cherish the hope that this accident to the Bo tree "will be the downfall of Buddhism in Ceylon."—*The Gardeners' Chronicle*.

ROSE MADAME G. BRUANT.

At a recent meeting of the Société d'Horticulture of Paris, M. Bruant exhibited a Rose which presented features of special interest. It is of hybrid origin, having been raised by the pollen of the Tea Rose Sombreuil out of the Japanese *Rosa rugosa*. The Rose in question, as might have been expected, differs from any Rose known in cultivation. It is described as a shrub of extraordinary vigor, which is always growing and always covered with trusses and large semi-double, white, fragrant flowers. It is the Rose which flowers earliest and is the last to show bloom. The bud is elongated, and will certainly be appreciated by the bouquet-makers. It strikes from cuttings and forees well, but does not produce seed, so that any further variation in this direction will have to be done by re-crossing.—*The Gardeners' Chronicle*.

PLEASANT GOSSIP.

A SUBSCRIBER'S OPINION.

It is with great pleasure that I enclose the money, \$1.25, to renew my subscription for the *MAGAZINE* for the coming year, believing I could not invest the same amount of money in any thing that would afford me more pleasure and profit too.

I believe you are doing a good work, to help educate the eye and the taste of the "million," to a much higher standard of refinement and love of the beautiful. There is no "journey work" about anything that comes from your establishment, but *every thing* indicates there is a master head and a master hand at the helm.

To one who can look back as I can, for more than fifty years, when almost the only picture to be found adorning the walls of the houses of the common people, was the traditional "Mourning piece," a pæony-cheeked woman under an "impossible willow," leaning on a tombstone, with a great spread of pocket handkerchief to her eyes—a road in the distance leading to the village church, up the side of a hill so steep that I often wondered how a carriage could get to the top without tipping over backwards, when such a work as your beautiful *MAGAZINE* was an unheard of thing, and to think now at how little expense one can now have such lovely pictures to adorn their homes, it seems as if everyone could appreciate the good work you are doing. If they could see it as I do, you would get five hundred new subscribers where you get one now.

Failing health and many cares are unfavorable conditions for the out-of-door cultivation of plants and flowers, but having a love for flowers that amounts to a passion, I can never give up my interest in them while I live. I have a few thrifty house plants which I take great pleasure in cultivating. I also enjoy experimenting with some of the many beautiful flowers to be found in this region.

I have been very much pleased with some of the flower plates in the *MAGAZINE*, and should like to have some more talk about them some other time if I shall not trespass too much.

Mrs. L. H. R., *Easton, Mass.*

We hope our correspondent will not fail to express herself fully in all that relates to the flowers or plates in which she is interested. As has many times been stated, this department of the *MAGAZINE* is for the use of our readers, and it is always open for their experiences or inquiries.

PONTEDERIA CRASSIPES.

I have a promise in the spring of a *Pontederia crassipes* major. Is it a desirable plant? I have looked in all my *MAGAZINES*, but do not find it mentioned.

S. J. H.

The *Pontederias* are all water plants. A common name for them is Pickerel Weed. In this region we have two spe-

cies that grow on the edges of shallow ponds, and slow running streams, and other bodies of water. The flowers of both are handsome and showy. *P. crassipes* is a tropical plant, being a native of Guiana, and consequently requires warm treatment. An aquatic house adapted to the wants of the *Victoria Regia* and the tropical *Nelumbiums* would also be well adapted to the growth of this *Pontederia*. But for those who have no such resource as an aquatic house, we may say that *P. crassipes* has been found to thrive as a window plant, growing in water in a *Hyacynth* vase. It is also adapted to the small aquarium often kept in the house.

POCKLINGTON NOT RIPENING.

A "Pocklington" vine which bore this year for the first time had, I should think, about five pounds of grapes. They looked very promising till they arrived at a certain stage, apparently being full-grown, then remained hard till the last of October or the first part of November and then dropped off the stem hard and unripe. It was a disappointment to us, and if you can tell me how to remedy the evil next year I should be very glad.

J. C. B., *Memphis, Tenn.*

We can offer no advice in this case, having never had a similar experience. In this locality the Pocklington is uniformly an abundant bearer, and the fruit comes to perfection. If any of our readers can throw any light on this inquiry we trust they will let it shine. Has this condition been noticed elsewhere with the Pocklington, or is it probable that the case complained of is an isolated one, and due to local causes?

DESTROYING SCALE INSECTS.

One of Professor RILEY's preparations for the destruction of scale insects is thus described: Take the whites of two eggs, three tablespoonfuls of sugar, three half pints of water, and five half pints of kerosene. Mix thoroughly by working them together by means of a force-pump and cyclone nozzle for five or ten minutes. The emulsion thus formed can be diluted with water, as may be desired, for application to infested plants.

THE WEEPING MULBERRY.

Having been supplied with a photograph of the Weeping Mulberry by W. E. Foston, of Hutchinson, Kansas, who took the impression from the original and only full-grown one of this kind, we are able to represent it exactly as it appears. The engraving has been produced from the photograph directly, and is, therefore, perfect in every detail. A notice of this new variety was made in our last number, but



for the benefit of new readers we may be pardoned for repeating, in substance, the account there given. This plant is a seedling of the Russian Mulberry and was raised in the garden of Mr. Measer of Kansas, who, observing its peculiar habit, trained it upright until a sufficient height was reached and then allowed it to branch; with the result we now perceive. It produces fruit similar to other trees of its species, which is black, rather small, but sufficiently agreeable. The foliage is abundant and the leaves are of handsome form. ■

As may be noticed the branches bend down and sweep the ground on all sides forming an object of much beauty when planted in suitable position.

The Russian Mulberry is very hardy and will endure our most severe winters, and thrive in any ordinary lawn or garden soil.

It can be propagated by cuttings, and only needs the necessary attention to keep the stem erect until high enough for the head to form.

NEW FUCHSIAS.

When the Fuchsia Storm King was ushered in last year, with such a blast of trumpets, every one rushed to the florists in eager haste to possess it, and it now holds rank and file atop, although there are other new ones just as handsome. If such a thing were possible, I should like to help balance the scales a little, by a few words in their behalf.

Perle von Brunn is very much like Storm King, with flowers equal in size, and the corolla a much purer white. The sepals are a clear, soft shade of red, and the plant is a stronger grower. Of the two I should much prefer Perle von Brunn, though I would be the last to take from Cæsar the things which are Cæsar's. But I know from experience that you must give the Storm King the best of care or its flowers will not be a whit larger than Specosia's, while the Perle will grow away nonchalantly, if you go away on a two week's visit.

Aurora Superba has not been in my collection long, but its odd colored, rich looking blossoms, and fine, vigorous growth ought to make it a favorite anywhere. The tube and sepals are a rich salmon, the corolla, large and spreading, of a rich orange scarlet, flamed with yellow. The sepals are broad and well reflexed, and it is said to be a very free bloomer, the nearest approach to a yellow yet found in Fuchsias.

Venus Victrix, with its white sepals and dark purple corolla, is an ideal Fuchsia only lately realized, and bids fair to become very popular; so also does President Grevy, petals rosy salmon, sepals clear lake.

Phenomenal is not a new Fuchsia, perhaps, but it is not so widely known as it ought to be, for a well grown specimen of it certainly eclipses anything I have ever seen in the Fuchsia line, and is acknowledged by every one to be the largest Fuchsia grown. Its growth is almost as vigorous as that of a Passion vine, and the only fault you can find with its blossoms is that they are almost too large. The color of tube and sepals is light red, corolla, bright violet.

Fashions in flowers, as well as in dress, go from one extreme to the other, and now the new Fuchsia Fairy Bells has the floor in some markets, its only pretensions to excellence being its free bloom-

ing habit, and the small size of its blossoms.

I wonder if every one who grows the Fuchsia knows how thankful it is for having its leaves sprinkled lightly every day, and how much larger the flowers are if the soil, as soon as the buds appear, is literally soaked with weak liquid manure as often as twice a week. I have had many old cultivators of plants tell me that I would kill my plants by over stimulating them, but I have never had that experience yet, and my blossoms are always very large. Soot is another thing that Fuchsias are very fond of, but I do not liquidize it, simply put a layer about the roots and let them take it in with the water.

KATE ELLICOTT.

MEXICAN ECONOMIC PLANTS.

A series of articles have been published in the "Arizona Daily Citizen," of Tucson, Arizona, prepared by John A. Spring, from the census maps of 1880, and the notes of the botanists with Lt. Wheeler's expeditions. From the above we make the following interesting extracts: The Mesquite tree is beginning to be utilized largely in the republic of Mexico, where the trees are sawed into brick-sized blocks for paving sidewalks, churches and other public buildings, it having been ascertained that it is of almost indestructible durability.

The Agave is cultivated largely in Mexico, not only for the manufacture of pulque and mescal but principally for the utilization of its fiber and pulp. When we consider the enormous size of the leaves attained by culture (6 to 8 feet) and the ease with which it can be made to propagate, we can easily understand that the revenue derived from an Agave plantation must be enormous. The fibers are extremely tough and strong, and are worked into mate, cordage, mattresses, etc., while the remaining pulp is utilized in the manufacture of a very superior paper.

All the Cacti of this territory, that may be considered as having sufficient "flesh" will undoubtedly before long be worked into pulp and thence into paper, and it is reasonable to suppose that factories will be established where the crude material is growing.

Our Creosote bush (*Larrea Mexicana*) with which thousands and thousands of

acres are covered, also has a future before it, either as a dye, or a gum or both. Dr. Loew's examination of the reddish-brown exudate on the branches, proves that it yields a red coloring matter showing all the reactions of that beautiful and expensive dyeing matter called cochineal. An analysis made at Paris at my request, says that the said exudation contained a very superior gum not unlike the fine Japanese lacq or varnish.

LADY BUGS AND "LONG-LEGS."

Having purchased several choice Chrysanthemums, I found included "gratis," innumerable "Thrips." Of course, I knew the most approved diet for them was tobacco water, and brought home one day, through the village strets, a bundle of tobacco stems sufficient for all the thrips in the state. I mildly suggested to the tobacconist's boy, that he would rob himself! But with a placid smile on his amiable countenance, he estimated the length of my arms and sized the bundle accordingly. It was not often he found anyone willing to lug off his refuse, and he made the most of the opportunity.

I returned thanks and started home with the papers bursting at every step. I got home with my bonnet askew on one side, and my temper askew on the other, and I flung that defunct cigar material in a very dark corner, and there it rests in inglorious obscurity.

In the meantime the thrips were multiplying and increasing and replenishing the earth, and the stems of the plants were black with them at least two inches from the tips.

Soon I began to discover an occasional grandfather long-legs and a lady bug—and remembering their fondness for potato bugs' eggs when I lived on the other side of the continent (we have no potato bugs here) I took each one whenever I saw one and carried it gently to the "mums" and gave it a soft resting place among the thrips. The pests began to grow beautifully less—and, to shorten the story, it was not long before they entirely disappeared. Which it was that did the work, I do not know—but it was done well and thoroughly. Both of these insects are among our best friends, and every one of them should be saved, as should every toad we can find.

ANNA WOODRUFF.

HORTICULTURE AT SAN JOSE.

The improvement within a few years has been wonderful in all parts of California, and particularly heré and in the southern counties. Where there were tens, there are now thousands of acres in fruit and vines. It has been found by experiment that the Orange, Lemon and Lime, do well in nearly all the counties of this state. And the earliest and finest are grown 600 miles north of Los Angeles, and north of Sacramento in the foot hills of the Sierra where formerly was the richest placer gold mines. We are beginning to grow them in this county; some thousand trees are in bearing now, and we have the second largest Olive orchard in bearing in this state. The main fruits raised here are the Prune, Apricot, Peach, Pear, and Cherry, and our shipments are the largest in canned and dried fruits of any county in the state. The nursery business appears to be flourishing here and the demand for some kinds of fruit trees this year could not be supplied. The growing of garden seeds is becoming quite extensive. Our people are generally very fond of raising flowers and many of our business and professional men find in these gardens their greatest pleasure. Up to Thanksgiving day our garden was beautiful and the number of flowers in bloom were pleasant to look at. For three nights we had severe frost, the thermometer was down to 24°, and Lilies, Heliotropes, and kindred plants uncovered were cut down. Pansies, Roses, Geraniums, Violets, Laurestinus, and some varieties of Abutilons at this date, November 29th, seem to have taken no hurt.

J. A. CLAYTON, *San Jose, Cal.*

CHAUTAUQUA VINEYARDS.

The annual meeting of the Chautauqua Horticultural society was held at Westfield, December 3d. R. W. Wright, of Westfield, was elected president; S. S. Crissey, secretary; and P. M. Manton, treasurer. Besides the usual business matters, the question of the "Fall and Winter Management of Vineyards, and care of Young Vines," engaged the attention of the members.

In planting a new vineyard the method is to strike out dead furrows eight or nine feet apart, plowing deep and running the plow a second time in the dead fur-

rows to make the soil deep where the vines are to be set. Plant eight by eight or nine by nine feet, digging the holes about ten inches deep. Mr. Ryckman, who has a large vineyard, puts a handful of bone dust to each vine, at the time of planting. In plowing, the soil is plowed away from the vines in the spring, and late in July or August, is turned toward them. Concord is the principal variety raised. Moore's Early and Worden are regarded favorably. The Chautauqua region is not considered suitable for the Catawba. In regard to winter protection, one member said the first thing to do was to get a strong, healthy growth. He had tried sowing Rye about September 1st with good results. In traveling over the ground, when picking the fruit, the ground is made firm, and in that condition the frost does not penetrate so easily.

CHRYSANTHEMUMS

The Chrysanthemum fever is dying out to some extent. It is well that it is so. I do not say this because I do not admire the flower, nor because I am not glad to see a great interest taken in the cultivation of any and all flowers. But because the "craze" has not been an indication of increased interest in floriculture for floriculture's sake. The florists have taken advantage of favorable circumstances to give this flower a "boom." They have done this so thoroughly in their own interests, rather than those of the flower, that a reaction is likely to set in, and it would not surprise me in the least if the Chrysanthemum were to very soon lose its hold on the flower-loving public. There is such a thing as overdoing what one sets out to do, and I am of the opinion that a good many of our florists who grow Chrysanthemums for the trade, and bring out annually dozens of seedlings which are catalogued as "very promising," "exquisite," "entirely different from anything else," "very desirable," and the like, have overdone matters. If the "craze" lasts much longer it will be necessary to invent some new adjectives for the use of the catalogue makers, and most of them must be in the superlative degree.

Many of the catalogues of last season had lists of this flower running up into the hundreds, and the amateur was com-

pletely at a loss as to what to select. It was an "embarrassment of riches." It seemed as if all of the varieties named must be well worth having, the descriptions were so attractive. When a selection was made an attempt was made to have it include the very best of the lot. I venture the assertion that ninety per cent. of those who ordered from these long lists were greatly disappointed when their plants came into flower this fall. It is a fact that nine-tenths of the varieties now on the market by dealers who make a specialty of this plant are comparatively worthless. The comparison I would give them in determining this, would be with some of the really first-class sorts, such as Golden Queen of England, Golden Rayonante, Snow-storm and Princess Melitia.

The florists have given the flower such a "boom" that they have felt quite sure of being able to sell anything they might put on the market, and quite naturally they wanted to have a good long list to appeal to the fancy of the flower-loving public, and, incidentally, to their purses. They have given attractive names to pretty near every seedling they raised, it would seem, and a more attractive description, and I suppose they have their reward. But the fact that they succeed in selling their plants does not prove that all of them are meritorious. The fact is, that most of them are not worth growing. The number of really desirable sorts for the amateur, that have been lately introduced can almost, if not quite, be counted up on one's fingers. This may seem like a sweeping assertion, and I admit that it is, but I think the experience of most disinterested parties who have grown many of the new varieties will bear me out in the statement.

Out of a list of seventy-five varieties, both old and new, procured last spring, the following are all that I would advise the amateur to invest money in: Mrs. George Rundle, white; Lady St. Clair, white; Golden Dragon, deep yellow; Madame Marthe, pompon, white; Grandiflorum, white, very large; Cullingfordii, rich maroon; Le Niger, maroon and lilac; Madame C. Andriger, rosy white; Emily Dale, pale sulphur yellow.

I do not pretend to say that this list includes all the desirable varieties; not at all. But what I do say is, that out of sev-

seventy-five sorts, these nine are all I consider worth keeping for another season. They include all the best and most characteristic features of the seventy-five. They give you the whole range of colors, and though there may be others quite as desirable, and even more so, that I have not grown, I would not thank any one for plants of other varieties in the list from which my selection was made.

If you grow flowers for quality rather than quantity, you make a mistake when you order a long list of these plants. The old and standard sorts are almost all fine, and it is safer to select from a list of the old kinds than from one of the long ones sent out by Chrysanthemum growers, for you can be sure that in selecting old sorts you are getting something worth growing, while you cannot be very sure of that when your selection is made from among two or three hundred names of new varieties. It isn't new varieties that we want so much as really fine flowers. When the present "rage" is over, the dealers will cut down their lists, and then you will be surprised to see how few really fine new varieties are included in them.

I have heretofore planted my Chrysanthemums out during summer, and lifted them about the time the buds began to show. In this way you can get large plants, but I do not think you get such fine flowers as you are likely to if you keep the plants growing in pots all the season. I think the quality of the flowers is injured by the removal of the plant from the open ground to the pot, though the plant seems to feel the change but little.

The flowers on the few plants kept growing in pots through the summer are much finer with me than any on plants taken in from the garden, though plants are not so strong. I shall keep most of my plants in pots another season. Those kept in pots this season were shifted three times and are now in ten-inch pots. They were given a rich soil, watered with liquid manure once a week all through the summer, and kept in a half-shaded, airy place. They received more attention in the way of pruning, and are much finer plants in shape than those grown in the garden.

EBEN E. REXFORD.

NEW YEAR SONG.

O, Sorrow, go thy way and leave me !
Weary am I of thee, thou Sorrow old.
Unclass thy hand from mine and cease to grieve me,
Fade like the winter sunset dim and cold.

Depart, and trouble me no longer !
Die ! vanish with forgotten yesterdays.
Eastward the darkness melts, the light grows
stronger,
And dawn breaks sweet across the shrouding haze.

Die and depart, Old Year, old Sorrow !
Welcome, O morning air of health and strength !
O glad New Year, bring us new hope to-morrow,
With blossom, leaf, and fruitage bright at length.

CELIA THAXTER.

HORTICULTURAL MEETING.

A note from Mr. Barry, president of the Western New York Horticultural Society gives the information that the annual meeting of this body will occur on Wednesday, the 25th of the present month—January, and, he adds: "We expect one of the most interesting meetings the society has ever held. Papers will be read by Professor Prentiss, of Cornell University; Dr. Collier, the new Director of the State Experiment station; Mr. E. S. Goff, Horticulturist of the Station; and several others. There is work enough prepared for several days."

Residents of this portion of the state who are interested in gardening and fruit-growing, either professionally or as amateurs, should give this society a cordial support, and should attend the meeting with the intention of adding to the interest and usefulness of the occasion, as well as to receive the benefits which it can confer. What is wanted is a free interchange of ideas on the subjects considered, and in which the members are mutually interested. Strangers from other parts of the state, and everywhere out of it, who may attend, will receive a hearty welcome.

FIBER FROM CENTURY PLANT.

The organization of a company in Mexico to manufacture fiber from the Century plant, *Agave Americana*, is in prospect. The Mexicans call the plant *Maguay* or *Pita*. A process has recently been developed there by which a fiber of such excellence is prepared from the plant that a permanent market for it in this country is considered as assured. A late issue of the *Mexican Financier* says:

"We regard the new discovery of the

fibrous plants as far more than equivalent to the discovery of rich gold mines. We have just received some Pita fiber from Chiapas, beaten out by the natives with rude instruments. Though good, it is not equal to the fiber obtained from the same plant by the process to which we have alluded. The Indians get a hard fiber, which, had it been treated by the process mentioned, would have been much softer and of a silky character."

PROGRESS IN AGRICULTURE.

A copy of the last Report of the Commissioner of Agriculture has been received, which notices the general condition of our agricultural interests at this time, and gives an account of the work doing by the Department in all its branches, which is really great and many sided. The following extracts will be of interest:

The year has been crowned with plenty, though in a large and fertile district, in the heart of the summer, the heavens were brass and the earth ashes. Even fervid suns and cloudless skies have failed to convert the fat areas of alluvium into a desert. When a field of Maize, with only a sprinkling of water from planting, is able to mature forty bushels to the acre, nothing but careless cultivation can destroy the crop. It is a truth, which observation affirms and reiterates, that natural disabilities, however heavy, are less injurious than bad cultivation, and can be measurably obviated by the intelligence, alertness and skill of the good farmer. It is the crop of the poor cultivator that is burned with drought, eaten by insects, or caught by the frost; if the skilled husbandman suffers a partial loss, his large remainder sold at appreciated prices and nets a fair return.

* * * * *

The Department has to-day no less than twenty separate and distinct branches, each busy in its own specialty and duty, and many of them sending through the country thousands of circulars, bulletins, and reports showing what science has to teach of the problems of the soil, of the insects which depredate, of the diseases which devastate, of the various other questions which continually confront our agriculturists, and making, as a whole, an aggregation of scientific effort sug-

gesting advancement and improvement in agricultural endeavor.

The position which the Department occupies to-day, then, is that of an adviser in those investigations and enterprises which are to have an important bearing upon the future agriculture of this country. * * * *

The production of the present year is not quite up to the average rate of yield. The crops which are notably deficient are Corn and Potatoes, both affected very seriously by the severe drought in the West. Cotton was also reduced by seasons characterized by great extremes of moisture and of inequality of temperature, which reduced vitality and decreased the rate of yield. Hay is another important crop which suffered from drought in a large district in the West, though abundant elsewhere. The cereals were generally harvested before the severity of the drought was felt, and made nearly average yields. * * * *

Special experiments in the treatment of grape mildew and rot have been made in a number of vineyards especially selected for the purpose, with the view of determining the relative efficacy and cost of the several treatments suggested. The data thus gathered have led to some valuable conclusions, and will be of the utmost service in conducting future operations. * * * *

Although many able papers have been published on the subject of peach yellows, and several observers have made careful scientific investigations of this very important but still obscure disease, the results so far obtained are far from conclusive as to its cause, possible remedy, or means of prevention. A special agent, to act under the direction of the chief of the section, has been commissioned to make a thorough investigation of this subject and to endeavor by every available means to settle beyond further doubt the questionable points. This work is progressing very satisfactorily, and extended investigations have been in progress since the first of July, in eastern localities, where the orchards have suffered most from the disease.

Early in the year a circular of inquiry relative to facts bearing upon the subject of potato rot was distributed throughout the country, and the extent and value of the information gained thereby was most

satisfactory. The work of compiling the information thus acquired has been completed and this material will form the basis of a report on this subject now in preparation. A map has been prepared which shows the distribution and severity of the disease in all parts of the country for a given year. * * * *

The newly established pomological division is subserving well the purposes for which it was organized; and there is abundant evidence that the assistance which it is affording to the fruit-growers of the country in stimulating and promoting our pomological industry is timely and that there was need of the establishment of such a branch in the Department.

WORK FOR THE MONTH.

This month the special work of the gardener is principally to care for the plants he has in growth, and where there is much glass it is no small matter—short days and long, cold nights require heavy firing and watchfulness. At this season those pot plants that are in a state of comparative rest need but little water, and when given it is better done in the morning, so that the temperature of the soil may not be reduced too much at night. Hyacinths, Tulips and other bulbs that have been potted some weeks and have made plenty of roots can now be brought into light and heat to make their growth and bloom; this can be done a few at a time, if it is desired that their blooming season shall be extended as long as possible. The danger in bringing such bulbs forward at this time is that they will be given too much heat, which will cause the flower-stem to develop too rapidly, and without sufficient foliage its growth will be prematurely checked, and it will remain stunted. A heat of 45° at night and 55° in the day-time, or at most 60° in sunshine, is sufficient for healthy growth and good blooms.

Chinese Primroses, if plants have been well grown, will now be in full bloom; weak manure water, or soot water, will greatly assist them. It may be given about twice a week. Cuttings of Chrysanthemums, Geraniums, Heliotropes, Fuchsias, and other plants, as occasion may present, can now be made.

This is a good time to test seeds preparatory to general sowing, if one has a

lot that he is not quite sure about; and there is no time to lose now, on fixing on the seed planting that is to be done later and making out lists to order and secure seeds in good time.

Prune Grape vines in the open ground on any mild days.

ABUTILON BOULE DE NEIGE.

This Abutilon is largely grown and its culture is largely increasing, as the flowers are eagerly sought for by reason of their purity of color, boldness of character, and adaptability for bouquets. In almost every nursery we find thriving specimens, which never seem without blooms, having almost as many now as in the height of summer. A useful way of dealing with the plant is to put out a well-grown specimen in a cool house, or a structure from which the frost is just excluded, and train the branches against the wall. It is astonishing what an amount of bloom such a plant will give, once it becomes thoroughly established, as it spreads freely and has handsome, luxuriant foliage of a fine green color. A favorite way of preparing the flowers for wreaths, or arrangements in which white is essential, is to remove the golden-colored anthers and gently bend back the petals. We have then a beautiful Eucharis-like flower.

The London Garden.

A YELLOW BOUVARDIA.

It is in prospect. It has not been obtained yet, though the name flava, indicating yellow, has been given to a sort whose flowers are yellowish, not true yellow. Perhaps the next advanced step from this flava variety will bring what is wanted—a pure canary-yellow Bouvardia. We have almost every shade, ranging from crimson through pinks to whites, and we may yet see a race of yellow varieties. On Tuesday Messrs. Veitch showed the most complete collection of sorts we have yet seen. There were about sixteen distinct kinds, including two species, *B. triphylla* and *B. leiantha*, both with small, bright carmine flowers. The richest colored single was President Cleveland, which is the finest of all the high-tinted sorts. Priory Beauty and Maiden's Blush are both very delicate in tone, while umbellata alba and the double Alfred Neuner are the best whites.

The London Garden.

CROPPING VINEYARDS.

"It is a common thing to cultivate crops in a young vineyard the first year," says SAMUEL MILLER, in *The Vineyardist*, and adds: "Potatoes is the usual one, and it is a bad practice, for we know that the Potato takes potash in its food largely, which the vines need. I grow nothing in a young orchard or vineyard, unless I have the means to return, in the way of manure, to make up for the tax on the soil."

The following statements on this subject were made at the meeting in November of the Allegan County (Michigan) Pomological Society:

CHRISTIAN LOEW had grown Wheat and Oats in his orchard. The Wheat was an injury to the trees and Oats are almost sure death to young orchards; planted Corn and Potatoes in the orchard; had not found them any detriment to the trees. It is safe to plant Corn, Potatoes or Beans in a young Peach orchard, provided you don't cultivate the ground too late in the season.

J. M. GRANGER had heard it stated that Potatoes are not good for the Peach orchard. Has any one present had any experience with planting Potatoes in Peach orchards, as compared with other hoed crops?

ISAAC BEAR had planted Potatoes among young Peach trees; had not observed any bad effect on the trees; his soil is strong clay loam; some sand and gravel. The Secretary said, if you plant Potatoes in a Peach orchard you should apply plenty of ashes to the Peach trees. Ashes will restore the alkali that the Potatoes extract from the soil. Peach trees should be well supplied with ashes sowed broadcast on the ground.

SCULPTURE IN HARPER'S.

An article by THEODORE CHILD, on "Modern French Sculpture," in *Harper's Magazine* for January, 1888, calls public attention to the fact that sculpture is not a dead art but a living one, which thrives and advances in the French Republic as

it does nowhere else in the world. The illustrations on this subject will doubtless cause much favorable comment. The clear-cut figures stand out wonderfully against the black (not gray) backgrounds.

MICE IN ORCHARDS.

Ha, ha, ha, haw. Why don't Mr. S. R. LELAND, Mr. N. OHMER, and everybody else that is troubled with mice in orchards, give a little strychnine with their feed, and if you don't feed, like Mr. OHMER, better commence it, and you will soon be rid of your mice, and thus save all hilling up, and after a year or two you can quit feeding and run no risk of losing your trees. Try it.

DR. W. H. GROVES, *Salt Lake City, Utah.*

WOQDRUFF GRAPE.

This variety appears to be growing in favor as it becomes known. The fruit is red, about the size of Concord, and a large bunch; it is sweet and ripens medium early. While ripening it has a strong foxy smell, but this odor is dissipated at the time of maturity, and then is not more apparent than in some other popular sorts. The vine is a healthy, strong grower and quite productive. It promises to be a favorite market variety.

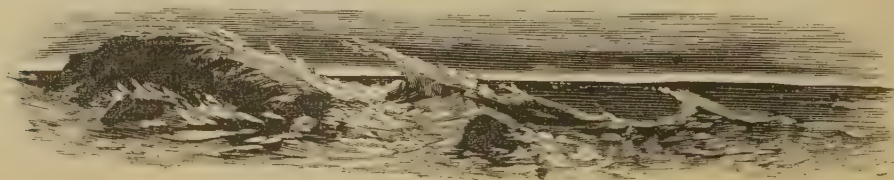
MEMORIAL TREES.

There is a curious law in vogue in Switzerland which compels every newly-married couple to plant trees shortly after the marriage ceremony. The trees ordered to be planted on wedding days are the pine and weeping willow. On natal days the suggestive birch tree is selected.

OHIO JR. POTATO.

A correspondent at Southport, Connecticut, writes to us as follows:

The Ohio Jr., I bought of you last spring is extra early. It yielded at the rate of 425 to 450 bushels to the acre; it was planted in drills and I did no hoeing, but pulled the weeds once.



OUR YOUNG PEOPLE.

A NEW YEAR'S BREAKFAST-TALK.

The north window in a certain breakfast-room was still frosted over when the family had gathered for the morning meal. Jack Frost had been busy all night perfecting his rarest pictures for a New Year's surprise. Boreas, with mistaken kindness, had lent his assistance by puffing tiny currents of air through invisible spaces in the sash and blowing the forming crystals into groups of fantastic and nameless shape. Where this disturbing element had not interfered there were towers and steeples, trees and bushes, rocks and hill-sides, ferns, mosses and lichens.

Three pairs of youthful feet had rushed at once to the window, and three pairs of eyes were delightedly scanning the frost-work as the parents and "grown-up" sister, Amy, seated themselves at the table. After various discoveries of glittering wonders and a general round of comments, Ernest, the eldest brother, exclaimed:

"There must be some sort of magic in the formations of these imitations of nature."

"Yes," added Maurice, "for the imitation is too complete to have been accidental."

"And see," said Bertha, "here, on this pane is a perfect landscape with a starry sky above it."

"Come, come;" said the father, "you can't subsist on frost-crystals and your breakfast is spoiling." When Grace had been said he continued:

"I suspect there is no forming process going on in the natural world that is 'accidental.' Some law of creative force—however hidden—controls every formation."

"But father," queried the thoughtful Amy, "how do you account for the *imitating* process—such as we see in that frost-work where it takes on the distinct form of growing things? It seems mysterious, that when our fierce northern climate has robbed the trees of their foliage and blighted all smaller growths,

that their semblance should be reproduced through the same frosty agency that killed what it tries to copy."

"—As though sorry for the havoc it has wrought,—yes, it does seem mysterious," answered the father, "but I cannot account for it. There is an all-pervading tendency in the latent forces of nature to form undulating or sinuous outlines in *flexible* growths—from the formation of the tree-tops to the most delicate mosses. When this principle does not assert itself—as for instance, in the stiff straight leaves of the Yucca,—it breaks out with double grace in the crown of bloom which adorns that plant with its abundant blossoms.

"Added to this tendency in nature is that of perpetuation by re-production. To these two tendencies we are indebted this morning for the crystal display of trees, ferns and mosses. Of the why and the how I can tell you nothing. But we may be content, that by the same element that makes our winters sometimes dreary, so much of beauty is wrought out for us; which is typical of what?—my daughter."

"Blessings, I suppose, which come to us through affliction."

"Yes, and there are many variations of the same principle confronting us every day. For my part, I am glad we cannot fathom every secret of nature. The world around us grows to me more beautiful, more wonderful each day, and I can heartily say as did Emerson to some doubtful friend—that *having seen* how marvelously God has fashioned all things in this life, I can fully trust Him for what I *have not seen* in the life to come."

"You have not quoted Emerson literally," said the wise mother, presiding at the coffee-urn.

"I know it," was the answer, "but I've given his *idea* in phrasing that suits myself. But what a long discourse a frosty little text has evolved! Now we must have those experiences of yesterday that each one of you was to narrate this morning.

I hope you all found some worthy subjects for assistance who are not on the list of charities,—for I know there are many such. Bertha, tell us whom you found and where."

"I had already found her, father; she goes to our school, and yesterday I went to see her. She is sick with sore throat and fever caused by wet feet. I had noticed at school that water oozed from her shoes as she walked, and wondered how she could stand it. It seems that her father had been an invalid long before his death, and in order to leave his wife out of debt he exchanged his farm for a smaller one fifty miles distant. A careful description of it, with a draft of the buildings, was shown him by the owner, who called himself the Rev. Mr. Lamb. But father, he was a wolf,—for when the family got to the new farm it was not there and never had been, the people said—unless it were lying underneath some other farm, (Ernest, what *are* you laughing about? I'm sure it was very pitiful.)

"The Lamb sold his new property immediately to a buyer he had in readiness, and disappeared and could not be found. The sick man's trouble hastened his death, of course, and his wife was left with nothing. Now, her own health has broken down, and I know they are almost suffering, although they will never say so. I want to get that girl some shoes and rubbers the first thing, and just leave them there with her name on the package, and say nothing. I can get them with my prize-money, you know."

"That's right, daughter, and I will see what else we can do for them in a quiet way. Now Maurice, let's hear from you."

"I've nothing to tell," said Maurice, twirling his fork in some embarrassment. "I'm no missionary. That sort of thing is for girls and women. If I were to go poking my nose around amongst people I'd be told to mind my own business."

"Of course, if you made yourself offensive. But I trust this is not the kind of spirit with which you begin the New Year. Surely, if you but use your eyes and ears you'll find opportunities for helpful doing."

Maurice looked appealingly to his mother, who understood her sensitive boy better than any one else in the world, and kindly said:

"We know that Maurice has always

been kind-hearted, and we may be sure that somebody will very often be the happier for his thoughtfulness."

"That's so," said Ernest, "but I never thought about it. You ought to have seen him the other day placing stepping-stones for an old woman to cross a mud-puddle. And I know that yesterday he pulled a drowning boy out of an ice-hole at the skating pond, for I heard of it several times last evening, and thought of course he'd report it first thing now."

"We were not asked that sort of thing," said Maurice, flushing, "besides any kind of boy would have done what I did. Who'd stand and see a fellow drown, I'd like to know!—you wouldn't!"

"Well, well," said the father, "we'll hear more about this later on. What's your report of yesterday, Ernest?"

"Oh, nothing much—only that I had a jolly good time rabbit-hunting with my new shot-gun."

"Indeed!" ejaculated his father. Then after a pause—"Ernest, when I made the request I did for you to act upon, the last day of the year, I had a special object in view. How could you so far neglect my wish as to seek only your own pleasure?"

Irish Biddy, depositing a fresh relay of hot "buckwheats," heard the last remark and broke out accordingly:

"Ef it's sakin' his own pleasure he wor, sure an' he guv it bock in double measure to a disthriss-ed tromp all in tathers, who marched off the place drissed loike a gintleman an' grinnin' loike a fule."

"How about that?" asked the mother, somewhat anxious as to the reduced state of Ernest's wardrobe.

"I came across the poor fellow as I returned from gunning, and noticing he had a decent face and was about my size I thought I'd give him an outfit from my out-grown clothes."

Maurice's eyes twinkled as he chimed in—"And save me the trouble of wearing them out." But the father said:

"Your clothing, Ernest, is yours to wear, but not yours to give away. Remember to consult your mother hereafter in such matters. Bertha proposes to expend money that she herself has earned. In thus denying herself some indulgence which it might have yielded her, she explains the true meaning of charity. It is no merit in the giver to bestow what has cost him neither effort nor money—even

if it be his own—though the gift itself may be of much use to some needy person. Hence, to withhold such possessions through thoughtlessness, or from disinclination to make the necessary effort to seek out worthy recipients is almost a sin. We are all accountable for our stewardship.

"But I am interested in your young tramp. His good suit would not supply him with supper and bed. I hope he did not have to sell or pawn a part of it to keep himself out of some infested place, such as are provided for lodging and feeding vagrants."

"O, no, father, I thought of that; and, having no money, I gave him the six rabbits I had shot, telling him he could get a dollar-and-a-half for them at a restaurant, and perhaps a position to work at the same place. But I deserve no credit for that either, for the rabbit-hunting had given me a day's pleasure and had cost me nothing."

"I think we'll credit you," said his father, "with having wisely instructed the fellow how to make a start toward an honorable living. Now, Amy—you who are always so thoughtful—"

"Please, father," interrupted Amy, "before we talk further allow me to explain a matter to yourself and mother that otherwise must seem very strange. You've all heard young Stanley spoken of, and that he has a furnished room in his employer's store. You've heard much in his praise coupled with regrets that he occasionally seemed the worse for stimulants. But he had won friends who stood by him, and finally he became a church member, and after a time was appointed to fill a temporary vacancy as Sabbath-school superintendent. How his sudden downfall came about is not known. But one Sunday afternoon some of his acquaintances found him in his room intoxicated. Covering him from head to foot with layers of his Sabbath-school papers, they left him, still unconscious of their visit. For two or three days afterward no one saw him but his employer, who still hoped for permanent reformation and patiently waited.

"There's a long story about all this which I cannot relate now. But the evening, you remember, when I was so belated returning from our society, I found Stanley lying almost in the road.

I recognized him in the moonlight clearly, and thought at first he was dead. But, Ernest! Maurice!—it was worse than that—for he was dead-drunk. The cold was so intense I feared he must be freezing there in the snow. So I quickly put my lap-robe over and around him, and, disliking to make his condition known to others, I drove directly to his pastor—as a suitable person to look after him just then—charging him to make no mention of my name. (It seems that Stanley has found a home there since that night.) Unfortunately your name, father was discovered on the robe and Stanley somehow found it out.

"The result is, that a note from his pastor last evening informs me that Stanley's father, who is here on a visit, will call here this morning to thank you, father, for your kindness to his son, and for screening his condition from the public. As his talk would have been all Greek to you, I felt obliged to explain the matter so that you may receive his thanks as naturally as possible."

"But, daughter, how could I accept thanks for —"

"It's of no use to object, father, for I will not —"

Here Biddy's shrill voice interrupted: "The gintlemon-tromp stonds ot the dhure axin' for Airnest. Sure, an' its mesilf has a haired-workin' broother who's not the loike of sich clo's for a Soonday." And she banged the door as she shut it behind her.

"I'll see the fellow this time," said the father. He soon re-appeared, reporting grateful thanks from the reclaimed tramp for having been lifted from a condition that kept him from returning home or from getting employment. He had secured a situation and would soon, he thought, be able to pay for his clothing.

"So, Ernest, continued his father," your impulsive benevolence turns out nobly, so far; and though our talk this morning has varied widely from the programme, we have been mutually benefitted, and may now consider both that and our breakfast concluded. Even the frost-work is melting, to be renewed again through the agency of immutable laws—a variation of which may have sent that young tramp in your way in answer to a mother's many prayers."

MARIA BARRETT BUTLER.

JACK'S CUCUMBERS.

Jack's mother was fond of this green member of the vegetable family, and Jack was fond of his mother. Now, every one knows quite well, that to raise Cucumbers under the intense heat and amid the drouth of last summer was a matter of no little difficulty. Jack's mother failed as never before, and saw, to her grief, one precious hill after another shrivel into bare nothingness, until not a single one was left to reward her labor. Jack had a bright idea, and begging, one morning, a few seeds of his mother, went, hoe in hand, to a spot near where the waste water ran freely. Here he made two or three new hills and planted his seeds, four in a hill. It was not long before they appeared in a new form, slender green stems, with two great leaves at the top. Then Jack began his attention in daily watering. When they began to lengthen into respectable vines Jack's mother taught him how to place brush under them, so that they need not lie close to the ground. Of course, the season had well advanced into midsummer by this time, and the heat grew still more intense. Jack could substitute wa-

tering for the much needed rain, but at noontide his plants began to assume a sorry look, the sure precursor of the evil soon to follow. Now Jack's brain was still active and another idea at work in it. There were two or three old umbrellas up in the garret, and one he knew to be a very large one. So, one morning, he got them out and hoisted one after another over his plants, and kept them there until late afternoon. The result proved a cheery set of vines, not at all overcome by the heat as before, and Jack continued his treatment each day, after plentiful watering.

Now, if you knew how many fresh, crisp, green Cucumbers Jack cut from those vines before frost came, you would be surprised. Not only was his mother's table supplied almost daily, but he had, every now and then, a few to take to friends, and this added not a little to his pleasure.

Let me say in conclusion, that if there should come another long, hot summer, and our young people be fond of trying experiments, why, just try it.

H. K.

LITERARY NOTICES.

BASTIN'S BOTANY.

A new work on botany by Edson S. Bastin, A. M., Professor of Botany, *Materia Medica* and Microscopy in the Chicago College of Pharmacy, was published some months since by G. P. Engelhard and Co., of Chicago. This work includes organography, vegetable histology, vegetable physiology and vegetable taxonomy, and a very full glossary of botanical terms. This is intended as a practical book for the student, either with or without a teacher, and is especially adapted to use in high schools, academies and colleges of pharmacy and medicine. One distinguishing feature of the treatise is its arrangement, leading the "mind of the pupil from that which is familiar to that which is less so—from the known to the unknown;" first becoming acquainted with the external organs of plants, then studying their internal structure, a very natural method. Practical exercises to enable pupils to make careful examinations of the various subjects are appended to each chapter, and cannot fail to be of great value. The whole work is written in a lucid style and as free from technicalities as such a subject can be, and is freely illustrated. It is quite reliable, and will be found a valuable working manual.

ALDEN'S MANIFOLD CYCLOPEDIA.

The third volume of this excellent work is at hand, and it is plain that it is to be a great and useful cyclopedia, embracing the most reliable informa-

tion on all subjects. It is rich not only on subjects of history, biography, mythology and special and general literature and the arts, but especially so on those of science, giving full accounts of the latest ideas and discoveries. As a dictionary it is very complete, giving pronunciation, derivation and the various shades of meaning of every word. Evidently, excellent talent is engaged in the editorship, and it may be accepted as authority. It is offered at so low a price that any one can obtain it, and it should be introduced into the library of every school in the land.

SHADE TREES AND THEIR ENEMIES.

Our thanks are due the Commissioner of Agriculture, Norman J. Colman, for a copy of Bulletin No. 10, of the Division of Entomology, of the United States Department of Agriculture. This is a pamphlet of 70 pages, being a treatise on Shade Trees and their Insect Defoliators. The four most injurious species which affect the trees of the city of Washington, and the means of destroying them, are considered. These species are the imported Elm-leaf beetle, *Galereuca xanthomelæna*; the Bag-worm, *Thyridopteryx ephemeraeformis*; the White-marked Tussock-moth, *Orgyia leucostigma*, and the Fall Web-worm, *Hyphantria cunea*. This is the work of Professor C. V. Riley, the entomologist, who has made a full study of the subject, and offers excellent advice in regard to the best methods of destroying the insects.